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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/063,985

05/31/2002

Allen M. Ritter

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7590

12/11/2003

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EXAMINER

FLANIGAN, ALLEN J

ART UNIT

PAPER NUMBER

3753

DATE MAILED: 12/11/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/063,985

Applicant(s)

RITTER ET AL.

Examiner

Allen J. Flanigan

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 17,23,25 and 26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38 is/are allowed.
- 6) ☒ Claim(s) 1-3,29,30 and 32-37 is/are rejected.
- 7) ☒ Claim(s) 4-16,18-22,24,27,28 and 31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Applicant's election with traverse of the species of Figs. 1-4 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that "a complete and thorough search of the claims readable on the elected species" would overlap the search for nonelected species. This is not found persuasive because a proper traversal points out the errors in the requirement for restriction (in this case, the basis for requiring restriction was the finding that patentably distinct species were disclosed and claimed). No alleged errors in this determination were offered.

The requirement is still deemed proper and is therefore made FINAL.

Claims 17, 23, 25, and 26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Claims 1-3, 29, 30, and 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi et al. in view of Calaman et al.

Negishi et al. shows a housing with plural cavities connected in series defined in a housing. The inlet of one cavity is connected to the outlet of the preceding cavity, or to the housing inlet, and so on. Negishi et al. further show the use of corrugated fins for enhanced heat transfer.

Calaman et al. shows a similar heat sink for liquid cooling (with a single chamber or cavity in the housing) which expressly recognizes the equivalency of staggered rows of columnar or "pin" fins 25 and corrugated fins as means of enhancing turbulence and heat transfer in such cooling devices. Thus, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to substitute the staggered pin fin rows of Calaman et al. for the corrugated fins 17 of Negishi et al. in view of the express recognition in the art that these are equivalents, such being a mere substitution of known equivalents.

Regarding claims 32 and 33, note lines 7-11 of column 1 of Negishi et al. Even if not illustrated, it is clearly within the scope of the disclosure of this reference to attach the device to an electrical component to be cooled.

Regarding claims 36 and 37, specifying what fluids the applicant intends to use with the claimed device in use fails to further limit the structure claimed; such limitations drawn to intended use are not entitled to weight as structural limitations.

Claims 4-16, 18-22, 24, 27, 28, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 38 is allowed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references show various cooling or heat sink devices with flow passages.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (703) 308-1015. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7764.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

  
Allen J. Flanigan  
Primary Examiner  
Art Unit 3753

AJF